SONY®

AUDIO MIXER

MX-P21

OPERATING INSTRUCTIONS page 4

Before operating the unit, please read this manual thoroughly and retain it for future reference.

MODE D'EMPLOI page 10

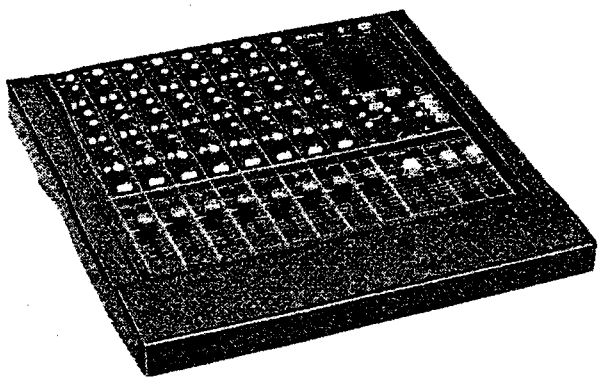
Avant la mise en service de l'appareil, lire attentivement ce mode d'emploi et le conserver pour toute référence ultérieure.

BEDIENUNGSANLEITUNG Seite 16

Vor der Inbetriebnahme lesen Sie bitte diese Bedienungsanleitung aufmerksam durch, und bewahren Sie sie zum späteren Nachschlagen gut auf.

MANUAL DE INSTRUCCIONES Página 22

Antes de utilizar la unidad, lea detenidamente este manual, y consérvelo para futuras referencias.



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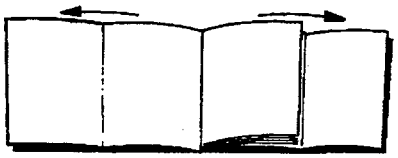
Please fold out this page and the last page to refer to the "LOCATION OF PARTS AND CONTROLS" and the "BLOCK DIAGRAM". The circled numbers in the illustrations and the diagram correspond to those of the "FUNCTION OF PARTS AND CONTROLS" in the text.

Falten Sie bitte diese Seite und die letzte heraus, so daß Sie beim Lesen „LAGE DER TEILE UND BEDIENUNGSELEMENTE" und „BLOCKDIAGRAMM" sehen können.
Die mit Kreis markierten Nummern der Abbildungen und des Diagramms sind die gleichen wie im Abschnitt „FUNKTION DER TEILE UND BEDIENUNGSELEMENTE".

Déplier cette page ainsi que la dernière page et se reporter aux chapitres "FONCTION DES PIECES ET DES COMMANDES" et "SCHEMA SYNOPTIQUE".
Les chiffres encerclés sur le schéma correpondent à ceux du chapitre intitulé "FONCTIONS DES PIECES ET DES COMMANDES".

Desdoble esta página y la última para referirse a "SITUACIÓN DE PARTES Y CONTROLES" y "DIAGRAMA EN BLOQUES".
Los números en los círculos de las ilustraciones y del diagrama corresponden a los de "FUNCIÓN DE PARTES Y CONTROLES" del texto descriptivo.



OWNER'S RECORD

The model and serial numbers are located at the rear. Record these numbers in the spaces provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. MX-P21 Serial No._____

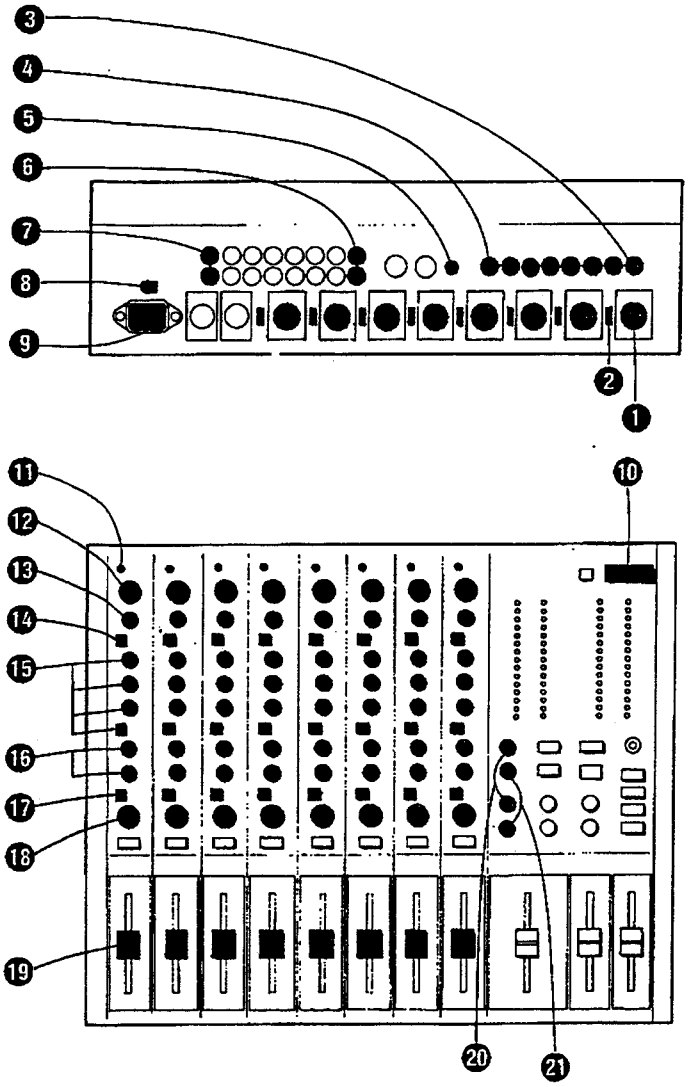
WARNING

- To prevent fire or shock hazard, do not expose the unit to rain or moisture.
- To avoid electrical shock, do not open the cabinet. Refer servcing to qualified personnel only.

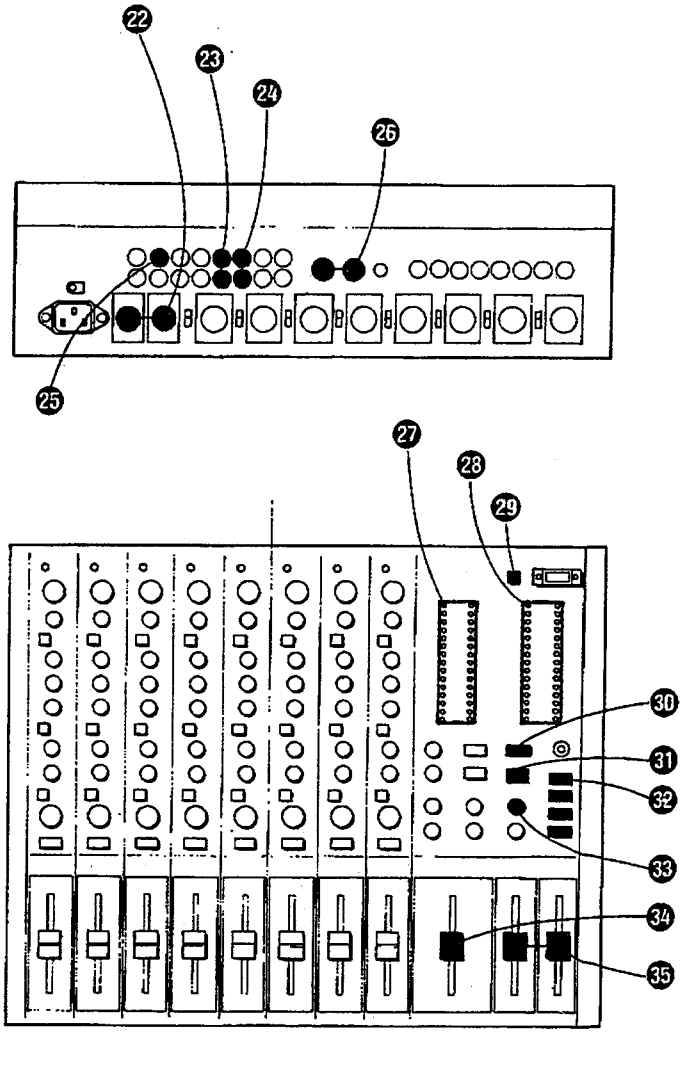
For the customers in Canada
This apparatus complies with the Class A limits for radio noise emissions set out in Radio Interference Regulations.

LOCATION OF PARTS AND CONTROLS/IDENTIFICATION DES ELEMENTES
LAGE DER TEILE UND BEDIENUNGSELEMENTE/SITUACIÓN DE PARTES Y CONTROLES

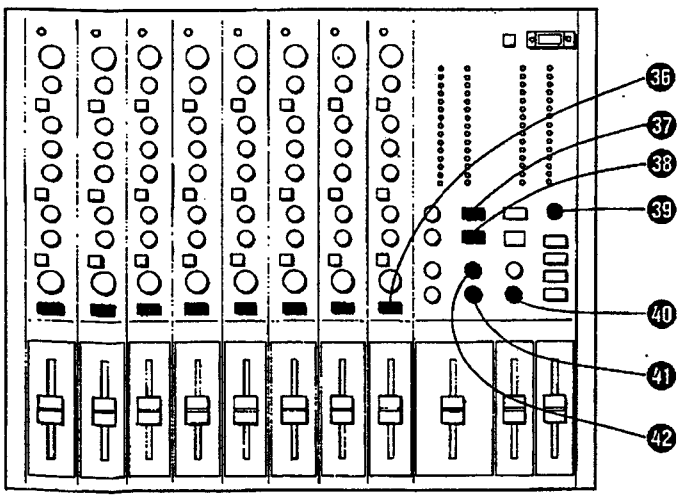
POWER AND INPUT SECTIONS
SECTIONS D'ALIMENTATION ET D'ENTREE
SPANNUNGSVERSORGUNGS- UND EINGANGSTEIL
SECCIONES DE ALIMENTACIÓN Y DE ENTRADA

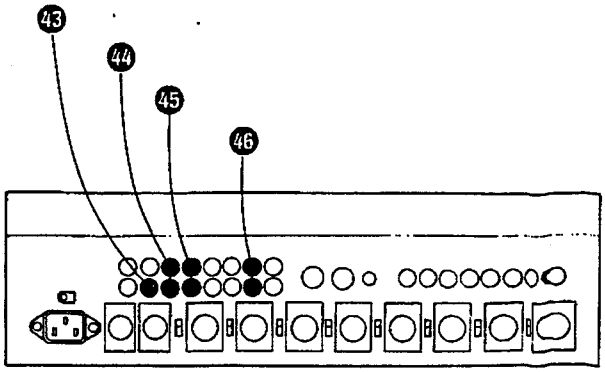


OUTPUT SECTION/SECTION DE SORTIE
AUSGANGSTEIL/SECCIÓN DE SALIDA



MONITOR SECTION/SECTION DE SURVEILLANCE/MONITORTEIL/SECCIÓN MONITORA





English

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FEATURES

The Sony MX-P21 has been designed to be multi-purpose audio mixer capable of performing all the essential functions required for a public address system, radio and TV broadcasting, studio recording and tape editing.

8 channel inputs with various adjustment possibilities
Each input can be independently adjusted to suit the connected equipment and to provide excellent mixing results from its own low-cut filter and equalization circuits. With the PAN POT (panoramic potentiometer) function, each input sound image can be positioned to the desired spot between the L and R stereo output channels.

Auxiliary inputs and outputs for additional mixing effects
By connecting an echo machine or a reverberation unit, additionally desired sound effects may be easily obtained.
One of the outputs can be used to supply signals to a fold-back speaker for players on the stage.

Monitoring of various signals
Each line and auxiliary output signal can be monitored either with headphones or speakers for accurate mixing. In addition, the PFL (pre-fader listening) function permits direct monitoring of each of the original incoming signals.

Talk-back function indispensable for studio use
The built-in microphone enables the operator to directly communicate with those in the studio.

Easy rack mounting
The table-top design can be easily converted for rack-mounting in a 19-inch standard rack or in specified racks designed for Sony U-matic video systems.

2-way powering for the unit plus microphones
The built-in DC-DC converter enables stable operation from either a 12 V car battery or an ac power supply, or both. Furthermore, the unit can supply 48 V dc to each of the connected phantom powered condenser microphones.

Supplementary functions for full creative flexibility
—Built-in oscillator to supply test and balancing signals.
—Through function which allows input signals to bypass the mixing circuits for direct output.
—Cascade connectors to multiply input channels.

PRECAUTIONS

On safety

- Check that the operating voltage of your unit is identical to the voltage of your local power supply.
  For car battery operation, use the car battery cord recommended for this set.
- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not to be used for an extended period of time. To disconnect the cord, pull it out by grasping the plug. Never pull the cord itself.

On installation

Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

On operation

When the unit is not used, turn the power off to conserve energy and to extend the useful life of your unit.

On cleaning the cabinet

Clean the cabinet, panel and controls with a soft cloth lightly moistened with mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzine.

On repacking

Do not throw away the carton and the packing material. They make an ideal container to transport the unit in. When shipping the unit for repair work or to another location, repack it as it was originally packed at the factory.

If you have any questions about this unit, contact your Sony dealer.

OPERATING VOLTAGE

Before connecting the unit to an ac power source, refer to the serial plate and check that the operating voltage of your unit is the same as the local power line voltage.
The USA and Canadian models operate on 120 V ac.
The models for other countries operate on either 110–120 V or 220–240 V ac. The voltage adaptation must be performed by authorized Sony personnel.

NOTICE FOR THE CUSTOMERS IN THE UNITED KINGDOM

IMPORTANT

The wires in the mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

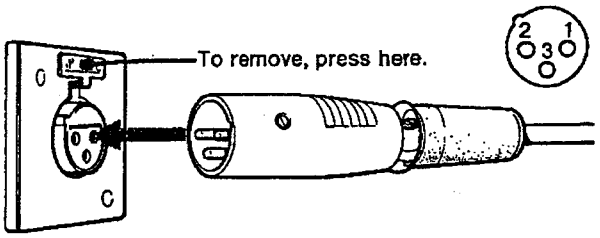
FUNCTION OF PARTS AND CONTROLS

Please fold out the first and last pages and refer to the illustrations and block diagram.

POWER AND INPUT SECTIONS

❶ **MIC INPUT 1–8 (microphone input) connectors**
(CANNON XLR-3-31 type)
For microphones.

Pin arrangement
1: GND 2: hot 3: cold



❷ **+48 V (microphone power supply) switches**
Set to ON to supply 48 V dc, 7 mA (max) to phantom powered condenser microphones connected to the corresponding MIC INPUT connectors.

❸ **LINE/PHONO INPUT 1–6 jacks** (phono jacks)
Accept line-out signals from tape decks and amplifiers, or phono-out signals from record players equipped with moving-magnet type cartridges.

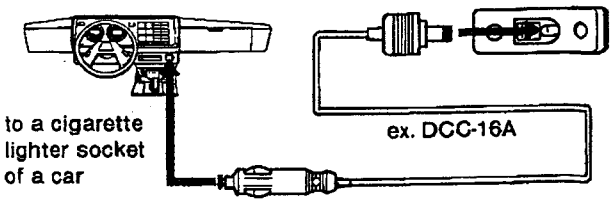
❹ **LINE INPUT 7/8 jacks** (phono jacks)
Accept line-out signals from a tape deck or an amplifier.

❺ **Ground terminal**
When connected audio equipment such as a record player requires earth connection to reduce hum or other undesirable noise, connect its ground wire to this terminal.

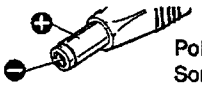
❻ **SUB INPUT jacks** (phono jacks)
Accept auxiliary input signals such as those from an echo machine.

❼ **FADER REMOTE 3/4 jacks** (phono jacks)
By sliding up the channel faders of channel 3 and 4 from the minimum (0) position, these jacks will be short-circuited to switch on audio equipment connected via an appropriate interface unit.
The permitted current to be supplied to these jacks is max. 2 mA.

❽ **DC IN +12 V (DC power supply) jack**
To power this unit from a 12 V car battery. For connection, use the optional DCC-16A, DCC-16AE or DCC-16AW car battery cord.



Note: Use only the recommended car battery cord manufactured by Sony. Polarity of the plugs of other manufacturers may be different.



Polarity of the plug of the Sony car battery cord

⑨ AC IN (AC power supply) socket
Connect with the supplied ac power cord to an ac power source. The USA and Canadian models are equipped with a 3-pin socket and the models for other countries are equipped with a 2-pin socket.
For the customers of the model supplied with the ac plug adaptor:
If the plug of the ac power cord does not match with the outlet, use the ac plug adaptor.

⑩ POWER switch and pilot lamps
Depress the switch to turn on the unit.
When ac power is supplied, the AC pilot lamp will light.
When dc power is supplied, the DC lamp will light.
● If both ac and dc power supplies are connected, the both the AC and DC lamps will light.

⑪ PEAK indicators
Light up if the corresponding input signals level is within 5 dB of the clipping level.

⑫ INPUT SELECT switches
Select the input sources. The switches of channels 1 to 6 have three positions; LINE, MIC, PHONO and the switches of channels 7 and 8 have two; LINE, MIC.

⑬ MIC (microphone gain) controls
Reduce excessive microphone input level and prevent distortion. Adjust these controls so that the proper level can be obtained when each corresponding fader is set at "7".
Turn the controls counterclockwise when the corresponding PEAK indicators light up.

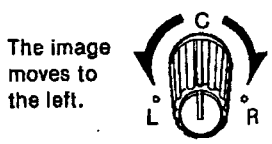
⑭ LCF (low-cut filter) switches
When the switches are depressed, input signals below 120 Hz are attenuated at a 12 dB/octave rate.

⑮ EQ (equalization) switches and controls
When the EQ switches are depressed, the input signals pass through the equalizer circuits. Adjust the controls to equalize the sound sources. The HI controls are for the high-frequency range around 10 kHz, the MID controls are for the middle-frequency range around 2.8 kHz and the LOW controls are for the low-frequency range around 100 Hz.

⑯ AUX 1/2 (auxiliary output level) controls
Ajust the signals level of each channel going to the auxiliary outputs 1 or 2 respectively.

⑰ PRE (pre-fader) switches
When the switches are depressed, the pre-fader signals of the corresponding channels can be fed to the auxiliary output 1. These are especially useful when the auxiliary output 1 is used for a fold-back speaker.

⑱ PAN POT knobs
These permit panning of the incoming signals between the output L and R channels. The center click positions place the sound images in the center.



⑲ Channel faders
Adjust the signal level of each channel going to the line outputs for proper balance. The position 7 (the thick line) indicates the reference level.

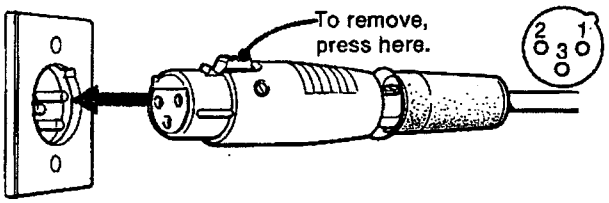
⑳ SUB IN 1/2 LEVEL controls
Adjust the signal levels from SUB INPUT 1 or 2 jack ⑤ respectively.

㉑ SUB IN 1/2 PAN knobs
Position the sound image of SUB INPUT 1 or 2 in the desired place between the output L and R channels.

OUTPUT SECTION

㉒ LINE OUT L/R (line output) connectors
(CANNON XLR-3-32 type)
Feed out the mixed line output signals (balanced).

Pin arrangement
1: GND 2: hot 3: cold



㉓ LINE L/R (line output) jacks (phono jacks)
Feed out the same signals (unbalanced, however) as the CANNON type connectors ㉒.

㉔ AUX 1/2 (auxiliary output) jacks (phono jacks)
Each supplies monaural output signals independently of the line outputs ㉒㉓. Connect to an echo machine or a power amplifier to drive a fold-back speaker.

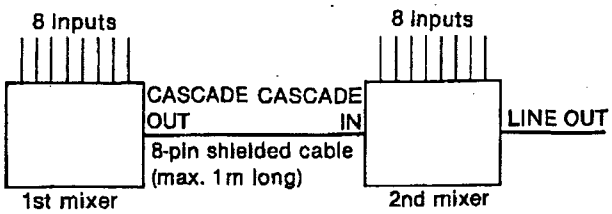
㉕ TB (talk-back output) jack (phono jack)
While the TB OUT button of the TALK BACK buttons ㉖ is depressed, the signal from the built-in microphone is fed to this jack.

㉖ CASCADE IN/OUT connectors (8-pin DIN connectors)
For connecting two or more MX-P21 units in parallel to increase the number of inputs.

Pin arrangement

1: AUX-1 5: PFL control
2: GND 6: LINE L
3: AUX-2 7: LINE R
4: PFL audio 8: GND

Connection



㉗ **MASTER L/R VU meters**
Indicate the L and R channel line output levels respectively. (When the EXT MON switch ㊲ is depressed, external signal levels will be indicated.)

㉘ **AUX 1/2 VU meters**
Indicate the auxiliary output levels.

㉙ **7–8 THROUGH switch**
When this switch is depressed, the line input signals from channel 7 and 8 can be directly output from the LINE jacks ㉓ without passing through the mixing circuits, even if the power of the mixer is turned off.
Use this switch for copying tapes.

㉚ **OSC (oscillator) switch**
When this switch is depressed, a 1 kHz sine-wave is fed to the line outputs ㉒㉓. The level can be adjusted with the MASTER fader ㉞.

㉛ **MIC (built-in microphone)**
To send information from the mixer. The outputs to send can be selected with the TALK BACK buttons ㉜.

㉜ **TALK BACK buttons**
Select the outputs for the built-in microphone.
MASTER: line outputs ㉒㉓
AUX-1, AUX-2 } corresponding auxiliary outputs ㉔
TB OUT: TB output jack ㉕

㉝ **TB LEVEL (talk-back level) control**
Adjusts the built-in microphone sound level.

㉞ **MASTER fader**
Adjusts the overall signal level output from the LINE OUT connectors ㉒ and LINE jacks ㉓.
The reference level is indicated by a thick line.

㉟ **AUX OUT 1/2 (auxiliary output) faders**
Adjust the output levels of the AUX 1 and AUX 2 jacks ㉔ respectively.

MONITOR SECTION

㊱ **PFL (pre-fader listening) switches**
While the switch is depressed, the pre-fader signal from the corresponding channel can be monitored through headphones without affecting the main signal flow.
When the signal is to be monitored with the speakers connected to the MONITOR jacks ㊶, keep the speaker PFL switch ㊵ in the depressed position.

㊲ **EXT MON (external monitor) switch**
Depress to monitor the signals from the EXT MON INPUT jacks ㊻.
When the switch is depressed, the MASTER VU meters ㉗ indicate the external signal level.

㊳ **PFL (speaker pre-fader listening) switch**
When the switch is depressed, the original input signal corresponding the depressed PFL button ㊱ will be output from the MONITOR jacks ㊶.

㊴ **PHONES (headphones) jack** (stereo phone jack)
Accepts headphones having an impedance of 8 ohms or more.

㊵ **PHONES LEVEL (headphones level) control**
Adjusts the level of the headphones connected to the PHONES jacks ㊴㊺.

㊶ **MONITOR LEVEL control**
Adjusts the output level to the MONITOR jacks ㊶.

㊷ **MONITOR SELECT switch**
Selects the output signal to be monitored.
MASTER: line outputs ㉒㉓
AUX-1, AUX-2 } corresponding auxiliary outputs ㉔
The setting of this selector will have no effect when any of the PFL switches ㊱ or the EXT MON switch ㊲ is depressed.

㊸ **MON MUTE (monitor mute) jack** (phono jack)
To externally mute by 20 dB the monitor outputs from the MONITOR jacks ㊶ by short-circuiting this jack.

㊹ **MONITOR L/R output jacks** (phono jacks)
To connect a power amplifier to drive the monitor speakers.

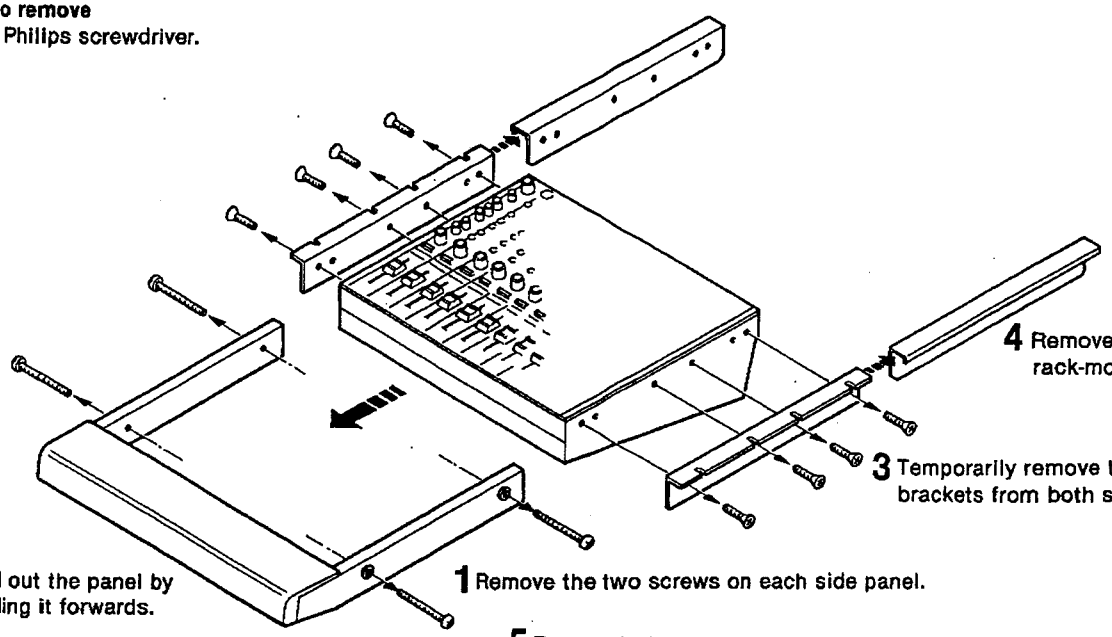
㊺ **PHONES L/R (external headphones) jacks** (phono jacks)
Feed out the same signals as those from the PHONES jack ㊴ on the operating panel.

㊻ **EXT MON INPUT L/R (external monitor input) jacks** (phono jacks)
To monitor external signals, for example; the monitoring of signals which have already been broadcast or recorded from the mixer.

RACK MOUNTING

By removing the front and side panels, the MX-P21 can be mounted onto a 19-inch standard rack or one of the various racks designed for the Sony U-matic video systems.

How to remove
Use a Philips screwdriver.



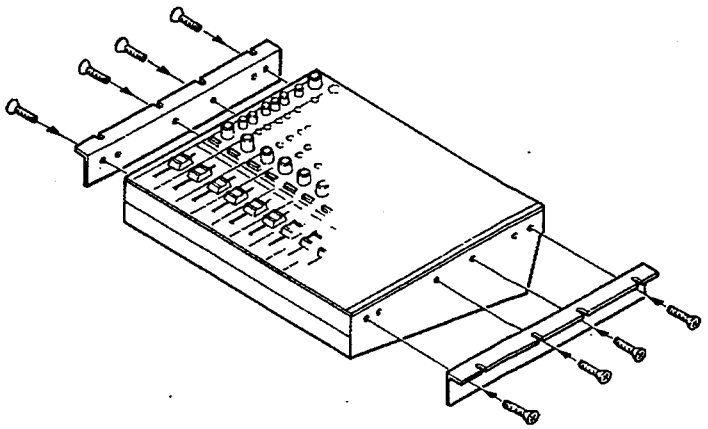
4 Remove the panels from the rack-mount brackets.

3 Temporarily remove the rack-mount brackets from both sides.

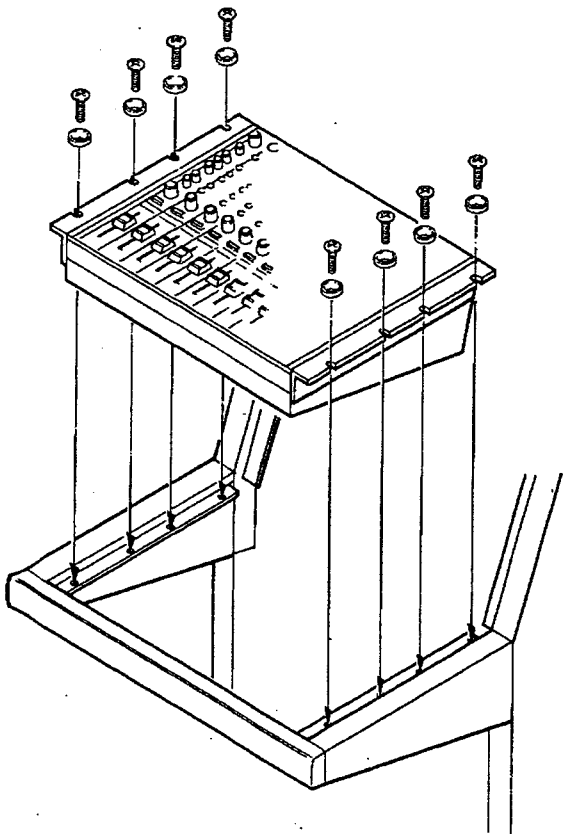
2 Pull out the panel by sliding it forwards.

1 Remove the two screws on each side panel.

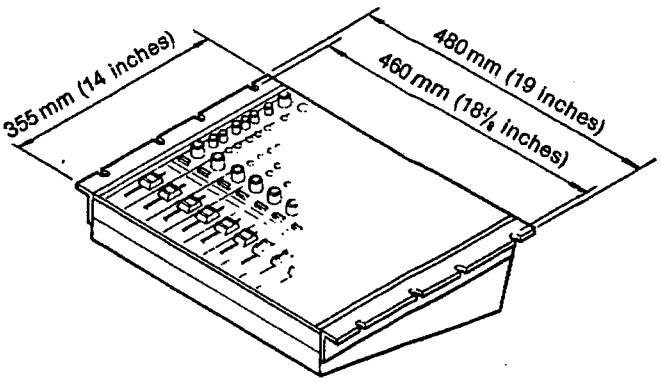
5 Re-attach the rack-mount brackets to the sides.



Mounting example



Mounting dimensions



SPECIFICATIONS

Inputs

(0 dBs = 0.775 V)

Connector	Channels	Reference input level	Maximum input level	Input impedance	Balanced or unbalanced
MIC INPUT (CANNON XLR-3-31 type)	8	−60 dBs	0 dBs	less than 600 ohms	balanced
LINE INPUT (phono jack)	8	−10 dBs	15 dBs	50 kilohms	unbalanced
PHONO INPUT (phono jack)	6	−44 dBs (1 kHz)	−14 dBs (1 kHz)	50 kilohms	unbalanced
SUB INPUT (phono jack)	2	−10 dBs	15 dBs	10 kilohms	unbalanced
EXT MON INPUT (phono jack)	2 (stereo × 1)	−10 dBs	15 dBs	10 kilohms	unbalanced

Outputs

Connector	Channels	Reference output level	Maximum output level	Suitable load impedance	Balanced or unbalanced
LINE OUT (CANNON XLR-3-32 type)	2 (stereo × 1)	4 dBs	24 dBs	600 ohms	balanced
LINE (phono jack)	2 (stereo × 1)	−5 dBs	15 dBs	more than 10 kilohms	unbalanced
AUX (phono jack)	2 (monaural)	−5 dBs	15 dBs	more than 10 kilohms	unbalanced
MONITOR (phono jack)	2 (stereo × 1)	−5 dBs	15 dBs	more than 10 kilohms	unbalanced
PHONES (phono jack)	2 (stereo × 1)	—	50 mW (8 ohms)	more than 8 ohms	unbalanced
TB (phono jack)	1 (monaural)	−5 dBs	15 dBs	more than 10 kilohms	unbalanced

Frequency response 20–20,000 Hz ($^{+0.5}_{-1.5}$ dB at 1 kHz)
Harmonic distortion (20–20,000 Hz)
Less than 0.3% under maximum input/output level
Equivalent input noise
Microphone inputs (input 150 ohms terminated, 20–20,000 Hz)
Less than −126 dBs
Line inputs (input short-circuited, 20–20,000 Hz)
Less than −80 dBs
Inherent noise
Master fader at 0 Less than −85 dBs
Channel fader at 0 Less than −70 dBs
Cross-talk (at 1 kHz) More than 60 dB
Built-in oscillator 1 kHz sine-wave
Equalization characteristics
(See "OPERATING CURVES" on page 26.)
Low-cut filter
Cut-off frequency 120 Hz −3 dB
Attenuation 12 dB/octave
(See "OPERATING CURVES" on page 26.)
Power requirements
AC USA and Canadian models:
120 V ac, 50/60 Hz
Models for other countries: 110–120 V or 220–240 V ac (adjustable by Sony personnel), 50/60 Hz
DC 12 V car battery by using the optional DCC-16A, DCC-16AE, DCC-16AW car battery cord
Power consumption AC 28 W
DC 12 V, 1.8 A
Operating temperature
0°C to 50°C (32°F to 122°F)
Storage temperature −20°C to +60°C (−4°F to +140°F)

Dimensions Approx. 482 × 130 × 448 mm (w/h/d) (19 × 5⅛ × 17¾ inches) excl. projecting parts
Weight Approx. 12.6 kg (27 lbs 13 oz)
Supplied accessories AC power cord (1)
AC plug adaptor (1)
(except USA, Canadian and UK models.)

While the information given is correct at the time of printing, small production changes in the course of our company's policy of improvement through research and design might not necessarily be indicated in the specifications. We would ask you to check with your appointed Sony dealer if clarification on any point is required.

ENREGISTREMENT PERSONNEL

Les numéros de modèle et de série se trouvent sur le panneau arrière. Inscrire le numéro de série dans l'espace prévu ci-dessous. Mentionner ces numéros lorsqu'on contacte le concessionnaire Sony pour toute question relative à cet appareil.

N° de modèle: MX-P21 N° de série_____

AVERTISSEMENT

● Afin d'éviter tout risque d'incendie ou d'électrocution, ne pas exposer l'appareil à la pluie ou à l'humidité.
● Afin d'éviter tout risque d'électrocution, garder le coffret fermé. Ne confier l'entretien de l'appareil qu'à un personnel qualifié.

Pour les utilisateurs au Canada

Cet appareil est conforme aux normes Classe A pour bruits radioélectriques, spécifiés dans le Règlement sur le brouillage radioélectrique.

TABLE DES MATIERES

Identification des éléments 3
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Précautions 11
Tension de fonctionnement 11
Fonction des pièces et des commandes 11
Installation en étagère 14
Spécifications 15
Schéma synoptique 26
Courbes de fonctionnement 26

CARACTERISTIQUES

Le Sony MX-P21 est étudié pour servir comme mixeur audio à finalités multiples car il dispose de toutes les fonctions essentielles nécessaires à un système de sonorisation publique, aux maisons de radio et de télévision, aux enregistrements en studio et aux montage de bande.

Huit entrées de canaux et nombreuses possibilités de réglage
Chaque entrée peut se régler indépendamment pour convenir à l'équipement raccordé et fournir d'excellents résultats de mixage car chacune possède son propre filtre et ses propres circuits d'égalisation. Grâce à la fonction PAN POT (potentiomètre panoramique), l'image sonore de chaque entrée peut être amenée à la position voulue entre les canaux de sortie stéréo gauche (L) et droit (R).

Effets de mixage supplémentaires par entrées et sorties auxiliaires
Des effets sonores très agréables peuvent être produits en raccordant un dispositif de production d'échos ou un réverbérateur.
Une des sorties peut également servir pour fournir les signaux à un haut-parleur de renvoi, destiné aux exécutants sur une scène.

Surveillance de plusieurs signaux
Pour assurer un mixage précis, chaque ligne et le signal de sortie auxiliaire peut être surveillé, soit par un casque, soit par des haut-parleurs. En outre, la fonction d'écoute en pré-atténuation (PFL) autorise une surveillance directe de chacun des signaux originaux.

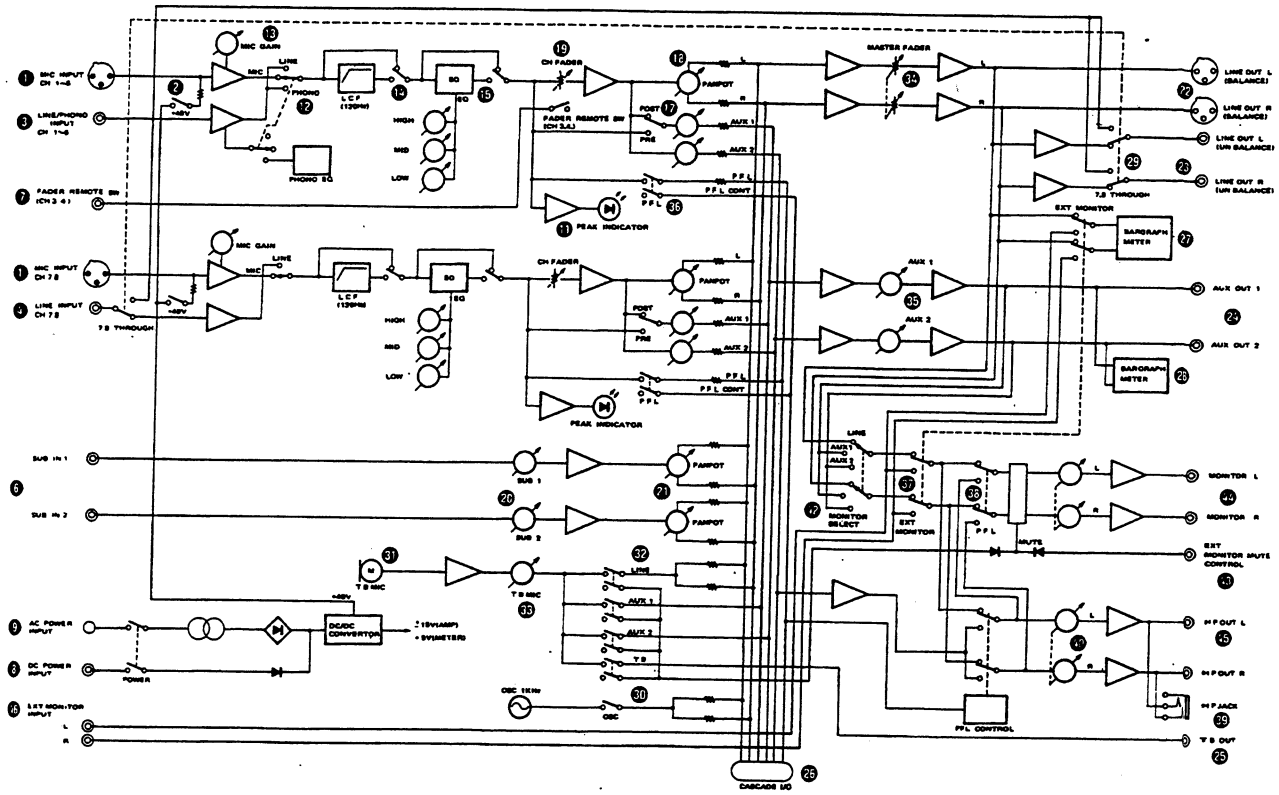
Interphone, indispensable pour les travaux en studio
Le microphone incorporé permet à l'opérateur de dialoguer directement avec les personnes du studio.

Installation facile en étagère
La construction plate et horizontale peut facilement se transformer et permettre l'installation de l'appareil dans un rack standard de 19 pouces ou dans un rack destiné aux système vidéo Sony U-matic.

Double source d'alimentation pour l'appareil et les microphones
L'incorporation d'un convertisseur CC-CC assure une exploitation stable soit sur une batterie de voiture de 12 V, soit sur une alimentation secteur soit sur les deux. De plus, l'appareil peut fournir un courant continu de 48 V à chacun des microphones électrostatiques à alimentation fantôme.

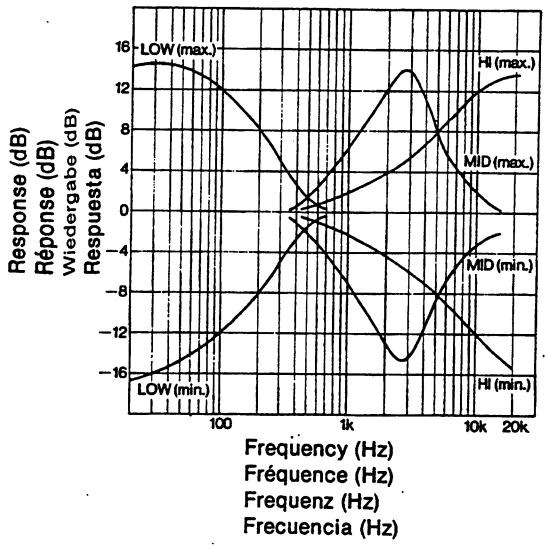
Fonctions supplémentaires donnant une grande liberté de création
—Oscillateur incorporé fournissant des signaux d'essai et d'équilibrage.
—Fonction de passage direct, permettant aux signaux d'entrée d'arriver directement à la sortie en évitant les circuits de mixage.
—Multiplication des canaux d'entrée par connecteurs en cascade.

BLOCK DIAGRAM/SCHEMA SYNOPTIQUE/BLOCKDIAGRAMM/DIAGRAMA EN BLOQUES



OPERATING CURVES/COURBES DE FONCTIONNEMENT BETRIEBSKENNLINIEN/CURVAS DE FUNCIONAMIENTO

Equalization characteristics
Caractéristique d'égalisation
Entzerrungscharakteristik
Características de ecualización



Low-cut filter characteristics
Caractéristiques de filtre de coupure des basses
Tiefenfiltercharakteristik
Características del filtro de corte de bajas frecuencias